DOCUMENT RESUME

ED 243 031 CG 017 402

AUTHOR Jankovic, Irwin N.; And Others
TITLE Impaired Performance Criteria and Human Helplessness: Time to Give Up?
PUB DATE Apr 83
NOTE 12p.; Paper presented at the Annual Meeting of the Western Psychological Association (63rd, San Francisco, CA, April 16-20, 1983).
PUB TYPE Reports - Research/Technical (143) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS College Students; Failure; *Helplessness; Higher Education; *Locus of Control; *Performance Factors; Psychological Patterns; *Time Factors (Learning)

ABSTRACT

The view that humans fail to solve certain types of problems because they are helpless and passive originated from a series of studies with animals; subsequent research attempted to replicate the findings of the learned helplessness behavior with humans. In an attempt to replicate and extend the Hiroto and Seligman (1975) study of humans exposed to uncontrollable events by investigating the relationship between uncontrollable events, giving up behavior, and learned helplessness, 33 college students participated in a problem solving study. The subjects attempted to solve a lever and shuttlebox problem under one of three treatment conditions: inescapable loud noise, escapable loud noise, or no noise. Under the escapable condition, subjects were told they could stop the noise and they would have to figure out how to do it. An analysis of the results showed that the subjects in the inescapable condition took more time to move the lever across the shuttlebox, thus terminating the noise, than did the subjects in the escapable condition. However, subjects in the inescapable condition did not give up sooner than subjects in either the escapable or control conditions. The findings show that while humans seem to learn more slowly after being subjected to unavoidable, inescapable stimuli and exhibit impaired performance, they are not helpless. (BL)

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Paper presented at Western Psychological Association Meeting, San Francisco, 1983.

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Impaired Performance Criteria and Human Learned Helplessness: Time to Give Up?

Irwin N. Jankovic, Michael G. Pipich and Melinda H. Laverty

Loyola Marymount University

This study compares alternative interpretations of why humans fail to solve certain types of problems. One interpretation views people as helpless and passive, the other as active problem solvers.

The initial impetus for the former view came from a series of studies with animals. Dogs exposed to electric shocks that they could neither escape nor avoid failed to later escape shock in a different situation when escape was possible (Overmier & Seligman, 1967; Seligman & Maier, 1967). These dogs reacted to the experience of uncontrollable stimulation by lying down, whimpering and passively accepting more shocks; in short, they apparently gave up any attempt to escape. This dramatic behavior was called learned helplessness and became the focus of intensive research.

Subsequent work has attempted to replicate these findings with humans exposed to uncontrollable events. For example, Hiroto (1974) pretreated college students with (1) uncontrollable (Inescapable) loud noises, (2) controllable (Escapable) noises or (3) a no noise (Control) condition. On an escapable test that followed, subjects who experienced uncontrollability

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were impaired in their ability to escape or avoid the unpleasant stimulation. Seligman has characterized these findings as replicating the earlier helplessness findings with dogs "quite exactly" (1975, p.30). Apparently, listening to a series of 45 loud tones (90dB) was enough to transform adult college students into human analogues of passive, whimpering, helpless dogs.

A more positive interpretation of these findings has been offered by Levine, Rotkin, Jankovic and Pitchford (1977) who argue that the experience of uncontrollability does not necessarily make humans helpless. Instead, it may make them learn more slowly or perform less well by misdirecting them to actively search for wrong solutions to the problems.

Subjects in the Levine et al. study were presented with as many as 100 trials of noncontingent feedback. Although they experienced uncontrollable problems, and therefore should have been made helpless, Levine et al. found that subjects did not give up or abandon attempts at finding a solution to the test problem. Rather, subjects who believed the solution to the first problem was simple, tended to look for simple solutions; subjects who believed that the problem was complex looked for correspondingly complex solutions. Since the test problem actually had a simple solution, the performance of subjects who were looking for a complex solution was impaired. Levine et al. characterized these subjects leaving the training problem as saying "This experimenter gives difficult problems," not as saying "Nothing I do matters"--the classic helplessness response.

In spite of the obvious importance of giving-up behaviors to learned helplessness theory, few, if any, studies with humans have attempted to directly measure such behavior. Instead, most studies interpret a variety of performance impairments (e.g., failure to escape, time to solve, etc.) as indicative of learned helplessness. The present study, therefore, is an attempt to replicate the Hiroto and Seligman (1975) study in its essential details, while at the same time providing a means for directly assessing whether subjects exposed to uncontrollable events do, in fact, become helpless and give up sooner than other subjects.

METHOD

Subjects: Thirty-nine Loyola Marymount University students volunteered to participate in a study on problem solving. Subjects were informed that participation would require that they listen to loud noises which were "unpleasant, but not harmful." After listening to a sample tone, all subjects chose to continue. However, two subjects in each of the three experimental conditions chose to withdraw from the experiment during the pretreatment phase. In addition, two subjects assigned to the Escapable pretreatment failed to reach escape criterion and were replaced.

Thirty-three subjects completed the study.

Procedure: Phase I. Subjects were individually brought into the laboratory and asked to fill out an informed consent form. After hearing a sample noise, they were seated at a table and randomly assigned to one of three experimental pretreatments as in Hiroto and Seligman (1975). The Escapable (controllable)

subjects listened to 45 prerecorded 93dB tones through headphones and were given a modified version of Hiroto and Seligman's instructions, as follows:

> As you sit here, from time to time a loud noise will come through the headphones. When it does, there is something you can do to stop it. Your task is to figure out how to stop the noise. There are two lights located on this base. The lights will tell you how the noise on each trial was controlled. If you find the way to stop the noise, then the green light, marked "Noise Out," will momentarily flash on after each time you stop the loud noise. If you don't stop the noise, then the orange light, marked "Noise Continues," will flash when the noise stops automatically. Remember, when the green light flashes on, this means that you have stopped the noise. But, if the orange light flashes, this means that you did not stop the noise--it stopped automatically. Taking off the earphones or dismantling the appartatus is not the way to stop the noise.

Each time a correct response (four button pushes) was made, the tone terminated and the green light was illuminated.

Subjects assigned to the Inescapable (uncontrollable) condition were given the same instructions as the Escapable subjects, but they were not informed that their button pushing could never terminate the noises. The orange light flashed after each 5-second noise.

The third group, a Control condition for the effects of the aversive stimulation, was asked simply to sit and listen to the noises.

Phase II. This phase was identical for all subjects. Subjects were seated at a table and told that their goal was to solve as many of a series of three problems as they could in the time allotted. They were told if they could not solve the problem they were working on, they should go on to the next problem.

The first problem was a shuttlebox with a lever that could be moved from one side to the other. Like in Hiroto and Seligman, subjects were told they would be listening to a series of loud noises, and there was something they could do to stop the noise. In the Hiroto and Seligman study, sliding the lever to one side of the shuttlebox terminated the noises. The time to make the slide response was used to measure performance impairment. The present study modified this task slightly in order to obtain a measure of giving up behavior: making the slide response never terminated the noises. Thus, the point at which subjects gave up and moved to the second problem directly measures the giving-up behavior predicted by learned helplessness theory. The nature of the second and third problems did not become known to subjects until they gave up the shuttlebox.

Figure 1 here

RESULTS

Because the standard deviations are proportional to the treatment means for both the time to make a slide response and the time to give up measures, a logarithmic transformation was performed on both measures. As predicted, the results of the time to slide measure were similar to those of Hiroto and Seligman in which the Inescapable subjects took more time to move the lever across the shuttlebox than did the Escapable subjects. Figure 1 shows the results of pre-planned orthogonal contrasts for the pairwise group differences. In an ideal helplessness experiment, we would also expect to find performance of Inescapably treated subjects to be impaired relative to control subjects. However, neither we nor Hiroto and Seligman observed such a difference.

Figure 2 here

Although helplessness effects have been demonstrated insofar that inescapably treated subjects take significantly longer to perform a slide response to turn off an unpleasant noise, these effects did not hold when giving up was used as the criterion. As Figure 2 shows, subjects in the Inescapable condition did <u>not</u> give up sooner than either Escapable or Control subjects; pre-planned orthogonal contrasts failed to show any differences.

DISCUSSION

These results show that humans do seem to learn more slowly after being subjected to unavoidable, inescapable stimuli. Learned helplessness theory could certainly explain this phenomenon, as could the Levine et al. mis-direction interpretation. The critical test, however, appears in the amount

of time subjects take to give up the task. Recall that the original helplessness criterion for dogs was passivity or unresponsiveness. It follows that if humans were made helpless, they would not only learn more slowly, but also would give up sooner than would non-helpless individuals. However, the results show that subjects given the standard "helplessness" pretreatment do not give up any sooner than do "non-helpless" subjects. Indeed, informal observation of subjects showed they made increasingly complex attempts to solve both Phase I and Phase II tasks (e.g., they tried various combinations of pushing buttons or moving the knob, knocking on the box, covering lights with their hands, even clapping and yelling "Stop!"). Clearly, these subjects had not given up.

There is another piece of data which may support the Levine et al. interpretation. Control subjects--who just listened to the 45 noises--also took significantly longer to make the slide response than did the Escapable group. Helplessness theory would suggest that because Control subjects did not experience uncontrollability their performance should match that of the other subjects who did not experience uncontrollability--the Escapable group. Therefore, an alternative account which can explain this result is that Control subjects had to learn to generate solutions to, what was for them, their first real problem (Phase II). Escapable subjects had learned which types of solution worked in Phase I and in Phase II could test these quickly. Inescapable subjects, who could find no workable solution to Phase I, were, in effect, in a similar position as Control subjects--they had to generate new hypotheses, which took time.

Research on learned helplessness has generated a complex maze of theoretical and empirical findings that are subject to a number of alternative explanations. Helplessness theory also has a great deal of intuitive appeal. Nevertheless, learned helplessness training does not always debilitate human subjects. This study has attempted to show that subjects who exhibit impaired performance are not necessarily helpless, especially as a result of exposure to such benign experiences as tones that cannot be controlled, insoluble anagrams, etc. In many cases, the helplessness pretreatment may simply direct people to search for wrong solutions to their problems. Indeed, characterizing humans as helpless may be an exaggeration that leads researchers to look for wrong solutions to their problems.

REFERENCES

Hiroto, D. S. Locus of control and learned helplessness. Journal of Experimental Psychology, 1974, 102, 187-193.

Hiroto, D. S. & Seligman, M. E. P. Generality of learned helplessness in man. Journal of Personality and Social Psychology, 1975, 31, 311-327.

Levine, M., Rotkin, L., Jankovic, I. N. & Pitchford, L. Impaired performance by adult humans: Learned helplessness or wrong hypotheses? Cognitive Therapy and Research, 1977, 1, 275-285.

Overmier, J. B. & Seligman, M. E. P. Effects of inescapable shock upon subsequent escape and avoidance responding. Journal of Comparative and Physiological Psychology, 1967, 63, 28-33.

Seligman, M. E. P. Helplessness. San Francisco: W. H. Freeman, 1975.

Seligman, M. E. P. & Maier, S. F. Failure to escape traumatic shock. Journal of Experimental Psychology, 1967, 74, 1-9.

FIGURE 1

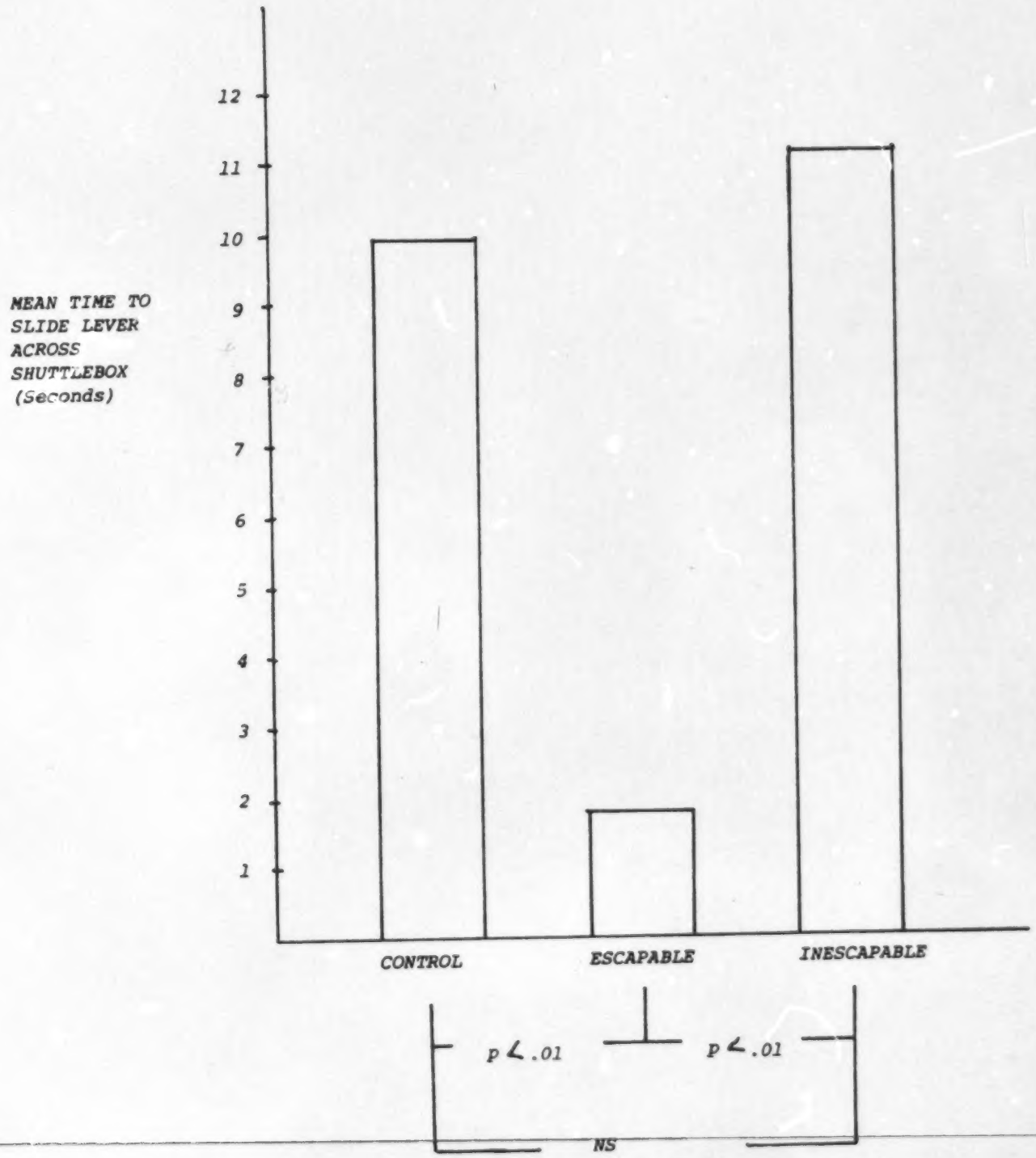
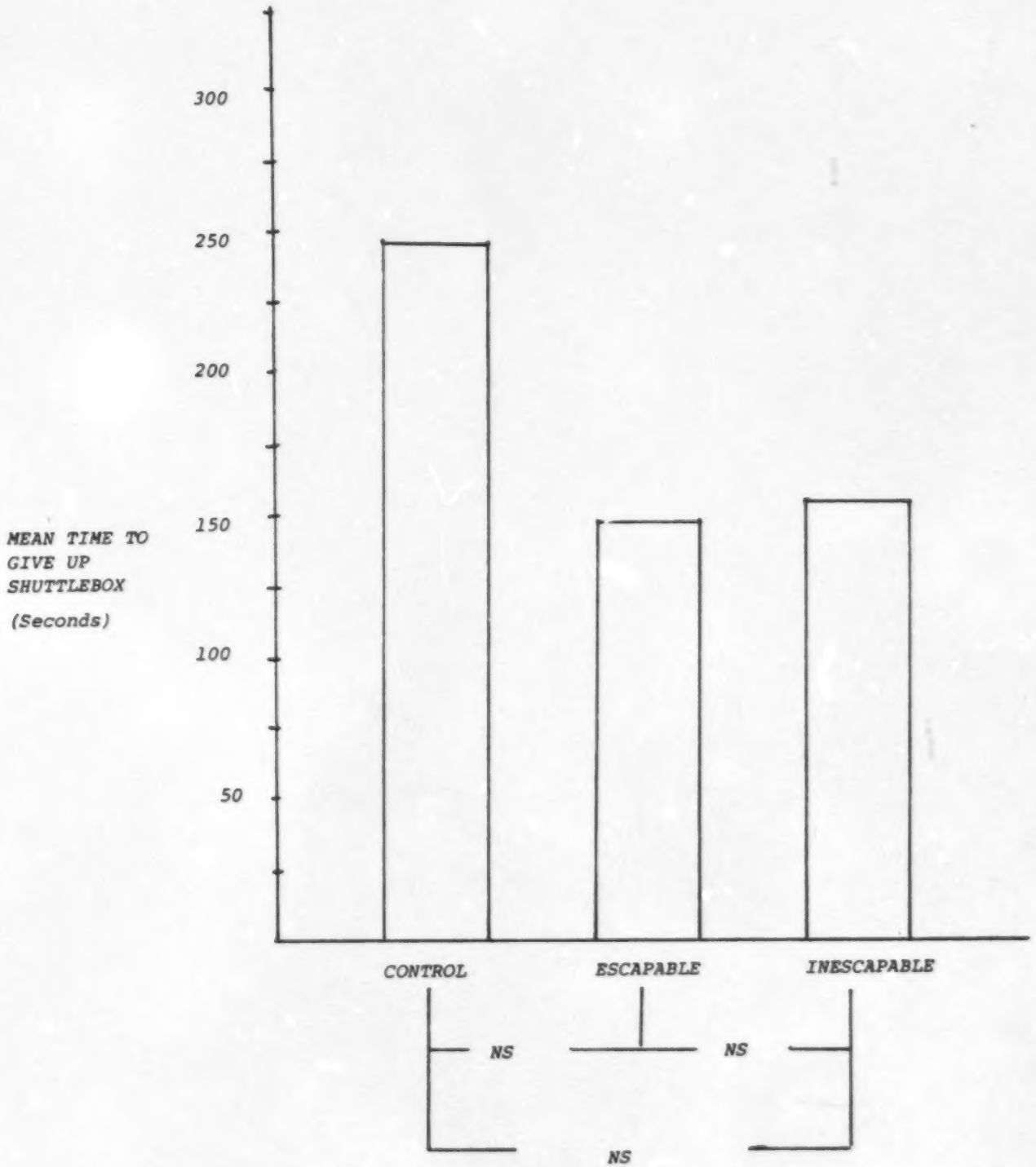

MEAN TIME TO SLIDE LEVER ACROSS SHUTTLEBOX (Seconds)
12
11
10
9
8
7
6
5
4
3
2
1
CONTROL
ESCAPABLE
INESCAPABLE
p < .01
p < .01
NS

FIGURE 2


300
250
200
150
100
50
MEAN TIME TO GIVE UP SHUTTLEBOX (Seconds)
CONTROL
ESCAPABLE
INESCAPABLE
NS
NS
NS